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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,919	08/26/2003	John R. Lloyd	MSU 4.1-595	5777
21036	7590	09/07/2004	EXAMINER	
MCLEOD & MOYNE, P.C. 2190 COMMONS PARKWAY OKEMOS, MI 48864			MARMOR II, CHARLES ALAN	
			ART UNIT	PAPER NUMBER
			3736	

DATE MAILED: 09/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/649,919	Applicant(s) LLOYD ET AL.	
	Examiner Charles A. Marmor, II	Art Unit 3736	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

2. Claim 1 is objected to because of the following informalities: in line 6, "a" should read --an--. Appropriate correction is required.
3. Claim 3 is objected to because of the following informalities: in line 2, "sputtering and/or electroplating" apparently should read --at least one of sputtering and electroplating--. Appropriate correction is required.
4. Claim 8 is objected to because of the following informalities: in line 5, "a" should read --an--. Appropriate correction is required.
5. Claim 15 is objected to because of the following informalities: in line 5, "a" should read --an--. Appropriate correction is required.

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6. Claim 17 is objected to because of the following informalities: in line 2, "sputtering and/or electroplating" apparently should read --at least one of sputtering and electroplating--.

Appropriate correction is required.

7. Claim 24 is objected to because of the following informalities: in line 5, "a" should read --an--. Appropriate correction is required.

8. Claim 31 is objected to because of the following informalities: in line 6, "a" should read --an--. Appropriate correction is required.

9. Claim 32 is objected to because of the following informalities: in line 5, "a" should read --an--. Appropriate correction is required.

10. Claim 35 is objected to because of the following informalities: in line 2, "eye" should read --eyeball--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 1-37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the phrase "optionally" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention.

Regarding claim 4, the claim limitations spanning lines 2-4, following the second occurrence of "signal" are unclear and ambiguous.

Regarding claim 5, the claim is indefinite because it defines limitations relating to the antenna, which is not definitely part of the sensor since the antecedent for the antenna follows the word "optionally" in claim 1. Furthermore, it is unclear how the antenna can be part of the inductance coil, yet external to the sensor as recited in claim 1.

Regarding claim 6, the limitation "based upon the signal" in lines 2-3 renders the claim indefinite because it is unclear whether "the signal" is intended to refer to the internal signal or the external signal recited in claim 1.

Regarding claim 8, the phrase "optionally" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention.

Further regarding claim 8, the limitation spanning lines 6-7 of the claim appears to be incomplete. As such, one cannot ascertain what is being claimed by that limitation. Applicant is advised that an amendment to complete the limitation may not recite a positive relationship to the animal body, or to the animal body fluid. The animal body, or parts thereof, is non-statutory subject matter and cannot be positively recited. Such a positive recitation would result in a rejection under 35 U.S.C. 101.

Regarding claim 10, the claim is indefinite because it defines limitations relating to the antenna, which is not definitely part of the sensor since the antecedent for the antenna follows

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the word "optionally" in claim 8. Furthermore, it is unclear how the antenna can be part of the inductance coil, yet external to the sensor as recited in claim 8.

Regarding claim 11, the claim attempts to define an element of the system solely using functional language, without defining any structural limitations for that element that allow it to perform the intended use. However, an element of an apparatus claim may be defined solely using functional language only under 35 U.S.C. 112, sixth paragraph, using a means-plus-function limitation.

Regarding claim 15, the phrase "optionally" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention.

Regarding claim 21, it is unclear from the claim language whether the "antenna" recited in line 2, is the same antenna that is optionally required by claim 15 or a second, distinct antenna.

Regarding claim 24, the claim language in lines 3-7 renders the claim indefinite. Lines 3-7 appear to recite a method step in the body of an apparatus claim. Therefore, the claim blends two statutory types of inventions, making it unclear what Applicant is attempting to claim as the present invention. Applicant is advised that an amendment to clarify this limitation may not recite a positive relationship to the animal body, or to the animal body fluid, as is currently recited in lines 6-7. The animal body, or parts thereof, is non-statutory subject matter and cannot be positively recited. Such a positive recitation would result in a rejection under 35 U.S.C. 101.

Further regarding claim 15, the phrase "optionally" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention.

Further regarding claim 24, the claim limitations spanning lines 9-15 are unclear and ambiguous.

Claim 24 recites the limitation "the inductance device" in line 10. There is insufficient antecedent basis for this limitation in the claim. There is no inductance "device" recited in the claim prior to this recitation.

Regarding claim 25, the claim is indefinite because it defines limitations relating to the antenna, which is not definitely part of the sensor since the antecedent for the antenna follows the word "optionally" in claim 24.

Regarding claim 26, the claim attempts to define an element of the system solely using functional language, without defining any structural limitations for that element that allow it to perform the intended use. However, an element of an apparatus claim may be defined solely using functional language only under 35 U.S.C. 112, sixth paragraph, using a means-plus-function limitation.

Claim 27 recites the limitation "the element" in line 1. There is insufficient antecedent basis for this limitation in the claim. There is no "element" recited in the claims prior to this recitation.

Regarding claim 28, the limitation "the means for monitoring *also includes* an atmospheric pressure sensor" in lines 1-2 renders the claim indefinite. It is unclear what other elements are encompassed by the means for monitoring.

Regarding claim 31, the phrase "optionally" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention.

Regarding claim 32, the phrase "optionally" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention.

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Further regarding claim 32, the claim limitations spanning lines 10-12 are unclear and ambiguous.

Regarding claim 33, the limitation “an intermediate unit (IU) is provided on the animal *outside of the eye*” is recited in lines 1-2. This limitation renders the claim indefinite. It is unclear why the claim relates the intermediate unit to the eye when no other element of the method is disclosed as related to the eye.

Regarding claim 34, the limitation “an intermediate unit (IU) is provided on the animal *outside of the eye*” is recited in lines 1-2. This limitation renders the claim indefinite. It is unclear why the claim relates the intermediate unit to the eye when no other element of the system is disclosed as related to the eye.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

14. Claims 1, 4-6, 8-11, 13-15, 18-22, 24-26 and 28-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Abita et al. ('235). Abita et al. teach a system and method for measuring fluid pressure in the eye of a living animal (see Fig. 1). The system includes a wireless capacitive MEMS chip sensor including an inductance coil and spaced apart capacitor plates as a

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inductive capacitive circuit; a mutual inductance producing device which measures a resonant frequency response of the sensor as an internal signal produced by the inductance device and as an external signal relative to the eyeball, the pressure of the fluid in the eye is detected over time as a result of a change in capacitance of the sensor due to a variation of the spacing of the plates produced by the fluid pressure; and means for externally monitoring the fluid pressure in the eyeball as a function of the external signal. At least one of the capacitive plates is adapted to be in contact with the fluid. Part of the inductance coil forms an antenna that is spaced away from the capacitor plates. The antenna receives the external signal and transmits back the internal signal for the determining externally of the animal for determining the fluid pressure. An element in the sensor provides a temperature reading of the fluid in the animal (col. 13, lines 32-50). The means for monitoring includes an atmospheric pressure sensor to provide a barometer (col. 13, lines 32-44). The sensor may be implanted in the vitriol chamber or the aqueous chamber adjacent to the cornea of the eyeball. A fluid pressure between about 10 and 20 mm is indicative of normal pressure and a fluid pressure between about 20 and 80 mm of Hg is indicative of glaucoma. The means for monitoring includes memory means (139) for storing a series of eye pressure determinations for several patients. The memory means may be a computer. An intermediate unit (145) is provided on the animal outside of the eye to receive and then transmit the signals from the sensor to a remote data acquisition and processing unit (col. 9, lines 49-56 and col. 11, lines 55-59).

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15. Claims 1-5, 8-10, 15-17, 21, 24, 25, 31 and 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Park et al. ('256). Park et al. teach a system and method for measuring fluid pressure in the eye of a living animal (see Fig. 10). The system includes a wireless capacitive MEMS chip sensor including an inductance coil and spaced apart capacitor plates as a inductive capacitive circuit; a mutual inductance producing device which measures a resonant frequency response of the sensor as an internal signal produced by the inductance device and as an external signal relative to the eyeball, the pressure of the fluid in the eye is detected over time as a result of a change in capacitance of the sensor due to a variation of the spacing of the plates produced by the fluid pressure; and means for externally monitoring the fluid pressure in the eyeball as a function of the external signal. At least one of the capacitive plates is adapted to be in contact with the fluid. Part of the inductance coil forms an antenna that is spaced away from the capacitor plates. The plate in contact with the fluid is a P++ doped silicon membrane (col. 6, lines 23-35). The coil is deposited on a substrate by electroplating (Abstract).

Allowable Subject Matter

16. Claims 7, 12, 23 and 27 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

17. The following is a statement of reasons for the indication of allowable subject matter:

No prior art of record teach or fairly suggest a method or system for determining a fluid

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pressure within a living animal, as claimed by Applicant, where temperature reading of the fluid in the living animal is determined by an element in the MEMS chip sensor, where the element is a series resistance in the circuit and the resistance changes as a function of temperature in the animal due to a change of frequency as a function of the temperature.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Jeffries et al. ('656) teach an apparatus and method for monitoring and measuring intraocular pressure. Fleischman et al. ('449) teaches a system for measuring the intraocular pressure of an eye including a MEMS sensor.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles A. Marmor, II whose telephone number is (703) 305-3521. The examiner can normally be reached on M-TH (7:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on (703) 308-3130. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Charles A. Marmor, II
Primary Examiner
Art Unit 3736

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August 30, 2004